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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,218	11/10/2000	Timothy L. Harris	1004-4896	4731

22120 7590 03/28/2005

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EXAMINER

ZHEN, LI B

ART UNIT PAPER NUMBER

2194

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action</b> <b>Before the Filing of an Appeal Brief</b>	Application No. 09/710,218	Applicant(s) HARRIS, TIMOTHY L.	
	Examiner Li B. Zhen	Art Unit 2194	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 07 March 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### NOTICE OF APPEAL

2. ☐ The reply was filed after the date of filing a Notice of Appeal, but prior to the date of filing an appeal brief. The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

#### AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

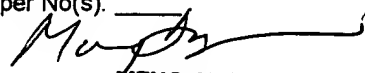
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: none.  
Claim(s) objected to: 7, 14 and 15.  
Claim(s) rejected: 1-6, 8-13 and 16-30.  
Claim(s) withdrawn from consideration: none.

#### AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

#### REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_  
13. ☐ Other: \_\_\_\_\_

  
**MENG-AL T. AN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2194**

Continuation of 11. does NOT place the application in condition for allowance because: Applicant's arguments are not persuasive. In response to the Final Office Action dated 1/5/2005 applicant argues:

(1) Massalin does not disclose linearizable operations or atomic operations for insertion and removal of values from a concurrent shared object; [p. 2, lines 22 - 24];

(2) The binary marker technique is a locking technique, thus blocking [p. 2, lines 26 - 29]; and

(3) Massalin does not disclose or suggest "means for traversing the encoded group without use of an atomic operation" [p. 3, lines 23 - 28].

As to argument (1), examiner respectfully disagrees and submits that Massalin teaches atomic operations [using Compare-and-Swap to perform linked-list insert and delete; section 3.3, p. 5 - 6]. Compare-and-Swap is an atomic operation that provides lock-free synchronization [section 2.3, p. 2]. As to linearizable operations, examiner notes that Compare-and-Swap is an atomic operation that provides lock-free synchronization. In addition, the specification identifies the compare-and-swap primitive as an instruction or operation that performs compound operations on memory in a linearizable form [p. 8, lines 25 - 31]. Since Massalin uses compare-and-swap to perform link list operations, the link-list operations are linearizable.

As to argument (2), examiner respectfully disagrees and notes that Massalin, throughout his paper, discloses a desire for lock-free synchronization [i.e., see abstract; p. 3, lines 1 - 2 and 11 - 14; section 3.4; section 4; conclusion]. Applicant pointed to section 3.3 on p. 6 but does not explain how the marking step of Massalin is a locking technique. Examiner notes that Massalin step of marking the node for deletion corresponds to applicant's step of marking a node for logical deletion. Applicant didn't differentiate the marking step of Massalin and the marking step of the claims. If applicant's submission that Massalin's marking step is a locking technique is correct, then it appears the marking step of the claims is also a locking technique.

In response to argument (3), examiner notes that since traversal and update is done separately then the traversal is done without the use of atomic operation. Generally, traversal of the link-list does not change the content of the list because traversal of the link-list is a method of looking for a particular node value, which means it is a read access. Read access doesn't require synchronize access because it is not making any changes to the list. The compare-and-swap operation (atomic operation) is used to provide lock-free synchronized access when an updated to the link-list is required (i.e. insert and remove). Therefore the traversal method of Massalin is performed without an atomic operation.

During an interview with applicant on March 22, 2005, examiner discussed with applicant the remarks submitted on 3/7/2005 to the Final Office Action dated 1/5/2005. Examiner also noted that claims 7, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.